

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1 – 17 (Cancelled)

18. (Original) A node in an interconnect link system comprising:

a first buffer for receiving a first data segment passing a first criteria based on a predetermined one or more bits for the first segment;

a second buffer for receiving a second data segment passing a second criteria based on the predetermined one or more bits for the second segment;

a first crossbar for receiving the first data segment from the first buffer; and

a second crossbar for receiving the second data segment from the second buffer, such that the first data segment and the second data segment are routed to one or more transmitters in one clock cycle in the node.

A 19. (Currently Amended) A node as recited in claim 18 further comprising a data packet having a plurality of bits, the predetermined one or more bits being a stripe bit wherein the stripe bit is used for ~~inverting a portion of the plurality of bits~~ determining the appropriate buffer to sort the data segments into.

20. (Original) A node as recited in claim 18 further comprising a receiver capable of sorting a plurality of received data segments based on the predetermined one or more bits in a data segment.

21. (Original) A node as recited in claim 18 further comprising a transmitter having an arbitrator to decide which data segment to transmit.

22. (Original) A node as recited in claim 18 wherein the first buffer and the second buffer are in a receiver.

23. (Original) A method of routing a received data packet through a node, the method comprising:

receiving a data packet at a receiver in the node;

examining the data packet based on one or more categorical bits in the data packet;
sorting the data packet to one of a plurality of buffers based on the one or more
categorical bits in the data packet; and

inputting the data packet to one or more crossbars, a crossbar corresponding to a buffer,
and routing the data packet to a transmitter such that two data packets can be processed by the
node in one clock cycle.

24. (Original) A method as recited in claim 23 wherein examining the data packet further
includes determining whether a stripe bit in the data packet is zero or one.

25. (Original) A method as recited in claim 23 wherein sorting the data packet further
includes routing the data packet to a first buffer if the one or more categorical bits meets a first
criteria and routing the data packet to a second buffer if the one or more categorical bits meets a
second criteria.

26. (Original) A method as recited in claim 25 wherein the first criteria is that one or more of
the categorical bits be a zero and the second criteria is that one or more of the categorical bits be
a one.

27. (Original) A method as recited in claim 23 wherein inputting the data packet to one or
more crossbars further comprises routing the data packet to a transmitter.

28. (Original) A method as recited in claim 23 further comprising maintaining the order of
sequential data packets passing through one of the plurality of buffers.

Claims 29 – 30 (Cancelled)

31. (New) A routing node suitable for use in a network that carries data packets, the routing
node having a plurality of input lines and a plurality of output lines, the node comprising:

a first receiver that receives packets from a first input line, the first receiver including a
first buffer arranged to receive data packets that contain one or more selected bits that meet a
first predetermined criteria, and a second buffer arranged to receive at least some of the data
packets that are not directed to the first buffer;

a first crossbar arranged to connect data packets from the first buffer with any of a plurality of output lines; and

a second crossbar arranged to connect data packets from the second buffer with any of the plurality of output lines, whereby packets received by the first input line may be transmitted to an appropriate output line through either the first or second crossbar.

32. (New) A routing node as recited in claim 31 comprising a plurality of receivers, each receiver being arranged to receive packets from an associated input line, and wherein each receiver has associated first and second buffers, each first buffer being coupled to the first crossbar and each second buffer being coupled to the second crossbar.

33. (New) A routing node as recited in claim 32 wherein each receiver is arranged to peek at a designated stripe bit in each data packet received by the receiver, wherein if the stripe bit is a designated value, the data packet is passed to the first data buffer.

34. (New) A routing node as recited in claim 33 wherein if the stripe bit is not the designated value, the data packet is passed to the second data buffer.
